

## IN THE CLAIMS

Claims 1-9, the pending claims, are amended are shown in the following claims listing, which supercedes any previous listing.

1. (Currently Amended) A method of processing images to identify regions of interest within a multi-dimensional data set, comprising the steps of:

\_\_\_\_\_ in which acquiring image data in such a way that individual images succeed one another in a direction of succession,

\_\_\_\_\_ constructing a multi-dimensional data set is constructed from the individual images, which multi-dimensional data set assigns data values to positions in a multi-dimensional space, established

\_\_\_\_\_ which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,

\_\_\_\_\_ reconstructing a slice through the multi-dimensional data set is reconstructed along a cut plane through the multi-dimensional space such that, and

\_\_\_\_\_ the direction of the cut plane has a component in the direction of succession, and

\_\_\_\_\_ locating in which a region of interest is located on the basis of the cut plane.

2. (Currently Amended) A method of processing images as claimed in claim 1, wherein the step of locating includes segmenting in which

segmentation of a region of interest from the one or more relevant images is performed in one or more of the individual images based on, and

- such segmentation is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set.

3. (Currently Amended) A method of processing images as claimed in claim 2, wherein the step of locating further includes locating in which

an edge is located in the reconstructed slice, whereby the segmenting and

- ~~the segmentation of the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant image.~~

4. (Currently Amended) A method of processing images as claimed in claim 3, including reconstructing in which  
~~respective slices through the multi-dimensional data set are reconstructed along a plurality of cut planes through the multi-dimensional space such that, and~~  
the directions of the individual cut planes have components in the direction of succession,  
individual edges are tracked in the individual slices,  
and the segmentation of the region of interest in the one or more images is performed on the basis of the individual locations of the respective edges found in the relevant image.

5. (Currently Amended) A method of processing images as claimed in claim 4, further including deriving in which  
~~a boundary of the region of interest is derived by interpolation between the individual locations in the relevant image of the respective edges found.~~

6. (Currently Amended) A method of processing images as claimed in claim 5, wherein said in which the interpolation is performed inter alia on the basis of a priori information concerning the region of interest.

7. (Currently Amended) An image processing system ~~that is arranged to process individual images that succeed one another in a direction of succession, and to reconstruct a multi-dimensional data set from the individual images, comprising:~~

processing means which: a) utilizes the multi-dimensional data set to assign assigns data  
values to positions in a multi-dimensional space;  
~~which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,~~

b) reconstructs

~~to reconstruct~~ a slice through the multi-dimensional data set along a cut plane through the multi-dimensional space, ~~wherein~~ where the direction of the cut plane has a component in the direction of succession, and

c) locates to

~~locate~~ a region of interest on the basis of the cut plane.

8. (Currently Amended) A computer-readable medium comprising a set of computer-readable program with instructions by which a microprocessor or like device capable of reading said instructions is able to:

process~~for processing~~ individual images that succeed one another in a direction of succession, and for

reconstruct~~reconstructing~~ a multi-dimensional data set from the individual images, assign

~~which multi-dimensional data set assigns data values to positions in a multidimensional space, which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,~~

reconstruct  
~~reconstructing~~ a slice through the multi-dimensional data set along a cut plane through the multi-dimensional space, where the direction of the cut plane has a component in the direction of succession, and

for locate  
~~locating~~ a region of interest on the basis of the cut plane.

9. (Currently Amended) A medical diagnostic workstation comprising~~that is provided with~~ an image processing system as claimed in claim 7.